

I-405 Improvement Project
Amendment 2 - Noise Study Report

El Dorado Pre-school

In Orange County from SR-73 to the I-605 Interchange

This addendum is addressing the possible traffic noise impacts and abatement measures for the El Dorado pre-school located along the northbound lanes of I-405 between the Bushard Street and Warner Avenue overcrossings. In the final Noise Study Report dated June 2011 conducted for I-405 Improvement Project, the play area of the pre-school was not identified as a frequent outdoor use area because at the time of the field survey this pre-school, which is located in a dense commercial area was not open for business.

Soundwall S776: This soundwall would be located along the right-of-way line on the northbound side of I-405. Traffic noise impacts are predicted at the playground of El Dorado pre-school represented by Receiver R2.77A. Feasible traffic noise abatement in the form of a soundwall has been identified for Alternatives 1, 2, and 3 for the small playground exposed to traffic noise levels from I-405. The traffic noise analysis was conducted with barrier heights ranging from 8 to 16 feet. A 12-foot high soundwall located at the right of way line would provide feasible abatement and would cut line of sight to the truck stack.

The predicted peak hour noise level is above 75 dBA without a soundwall in place; thus, this playground would be considered severely impacted. Where severe impacts are identified, unusual and extraordinary abatement must be considered. If Soundwall S776 is determined to be unreasonable based on cost, providing the soundwall will still be required for these playground.

The following are revised noise tables for each alternative that show the information for the new Receiver R2.77A as well as new tables showing the reasonableness allowance and top of the wall information. Revised figures for each alternative that show this new soundwall are also attached. It was assumed that the Receiver R2.77A would represent one frontage unit.

Alternative 1**Table 7-4A. Summary of Reasonableness Determination Data – Alternative 1 – Soundwall S776**

Barrier I.D.: S776					
Predicted Sound Level without Barrier					
Critical Design Receiver: R2.77A					
Design Year Noise Level, dBA $L_{eq}(h)$: 76					
Design Year Noise Level Minus Existing Noise Level: 2					
Design Year with Barrier	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction, dB	6	7	7	8	8
Number of Benefited Residences	1	1	1	1	1
New Highway or More than 50% of Residences Predate 1978 ^b	No	No	No	No	No
Reasonable Allowance Per Benefited Residence	\$39,000	\$39,000	\$39,000	\$39,000	\$39,000
Total Reasonable Allowance	\$39,000	\$39,000	\$39,000	\$39,000	\$39,000

Note: N/A-Not applicable. Barrier does not provide 5 dB of noise reduction.

^a A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

^b This adjustment increases the abatement allowance by \$10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

Table G-2 – Predicted Future Noise Levels and Barrier Analysis –
Alternative 1 – Segment 2 (Cont'd)

Receiver I.D.	Barrier I.D. and Location	Land Use ²	Number of Dwelling Units	Existing Noise Level Leq(h), dBA ^{1,3}	I-405 PA-ED Alternative 1 Future Worst Hour Noise Levels - Leq(h), dBA ^{1,6}																					
					Design Year No Build Noise Level Leq(h), dBA ¹	Design Year Build Noise Level Leq(h), dBA ¹	Design Year No Build Noise Level Minus Existing Conditions Leq(h), dBA	Design Year Build Noise Level Minus No Build Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type ⁴	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR)															
											8 feet			10 feet			12 feet			14 feet			16 feet			
											Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	
R 2.66 ^W	-	SFR	3	66 ^{MOD}	65	66	-1	1	B (67)	A/E	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 2.67 ^{W*}		SFR	1	60 ^{MOD}	59	60	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--	--		
R 2.68 ^W		SFR	2	55 ^{MOD}	54	54	-1	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--	--		
R 2.69 ^W		SFR	3	65 ^{MOD}	64	65	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--	--		
R 2.70 ^{W*}		SFR	1	58 ^{MOD}	57	58	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--	--		
R 2.71 ^W		SFR	3	64 ^{MOD}	63	64	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--	--		
R 2.72 ^{W*}		SFR	2	59 ^{MOD}	58	59	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--	--		
R 2.73 ^{W*}		SFR	2	54 ^{MOD}	53	53	-1	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--	--		
R 2.74 ^W	-	SFR	3	64 ^{MOD}	63	63	-1	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 2.75 ^W		SFR	3	64 ^{MOD}	63	61	-1	-2	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 2.76 ^W		SFR	4	64 ^{MOD}	63	58	-1	-5	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 2.77A ^C	S776 / R/W	SCH	1	74 ^{MOD}	75	76	1	1	B (67)	A/E	70	6	1	69	7	1	69 ^{R,T}	7	1	68	8	1	68	8	1	
R 2.77 ^W	-	MFR	2	60 ^{MOD}	61	58	1	-3	B (67)	NONE	57	1	0	57	1	0	57	1	0	56	2	0	56	2	0	
R 2.78 ^W		MFR	4	61 ^{M,ST19}	62	59	1	-3	B (67)	NONE	57	2	0	56	3	0	56	3	0	56	3	0	56	3	0	
R 2.79 ^W		MFR	4	65 ^{MOD}	66	60	1	-6	B (67)	NONE	58	2	0	58	2	0	58	2	0	57	3	0	57	3	0	
R 2.80 ^W	S788, & S792 Shoulder	SFR	3	64 ^{MOD}	65	62	1	-3	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.81 ^W		SFR	3	68 ^{MOD}	69	66	1	-3	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	62	4	0	62	4	0	
R 2.82 ^W		SFR	2	67 ^{MOD}	68	67	1	-1	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	64	3	0	64	3	0	
R 2.83 ^W		SFR	3	66 ^{MOD}	66	65	0	-1	B (67)	NONE	--	--	--	--	--	--	--	--	--	63	2	0	63	2	0	
R 2.84 ^W		SFR	4	66 ^{M,LT11,CAL}	66	65	0	-1	B (67)	NONE	--	--	--	--	--	--	-- ^T	--	--	64	1	0	64	1	0	
R 2.85 ^W		SFR	4	66 ^{MOD}	66	66	0	0	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	65	1	0	65	1	0	
R 2.86 ^W	-	SFR	3	65 ^{MOD}	65	65	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	63	2	0	62	3	0		
R 2.87 ^W		SFR	4	64 ^{MOD}	64	64	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	62	2	0	62	2	0		
R 2.88 ^W	-	SFR	4	62 ^{MOD}	62	61	0	-1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.89 ^W		SFR	3	63 ^{MOD}	63	57	0	-6	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.90 ^W		SFR	3	62 ^{MOD}	62	58	0	-4	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.91 ^W		SFR	2	63 ^{MOD}	63	62	0	-1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.92 ^W		SFR	1	61 ^{MOD}	61	60	0	-1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - school; REC - recreational/park; REL - religious institution; LIB - library.

3 - M - Measured noise level; STxx or LTxx - measurement site number; CAL - noise model calibration site; MOD - Estimated from No-Build Alternative and measurement sites.

4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.

5 - Barrier height needed to meet requirements at adjacent receptor(s).

6 - Traffic noise from the freeway only; other local noise sources are not included.

7 - Existing soundwall is at a height of 16 feet.

R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.

T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.

C - Critical design receiver.

Int - The modeled exterior noise levels have been reduced based on window types and the interior noise criteria has been used for this receiver because there is no outdoor use.

W - Receiver protected by existing private property wall or soundwall.

* - Non first row residences.

**Table H-2 – Barrier Locations and Elevations –
Alternative 1 – Segment 2 (Cont'd)**

Barrier No.	Receivers Protected (Receiver No.)	Barrier Location / Hwy. Side	Barrier Stations ¹	Approximate Barrier Height, ft	Top of Barrier Elevation ² , ft
S776	R2.77A	R/W / Northbound	773+50 ¹⁰	12	43.6
			774+00 ¹⁰	12	43.5
			774+25 ¹⁰	12	43.4
			774+50 ¹⁰	12	43.4
			774+75 ¹⁰	12	43.3
			775+00 ¹⁰	12	43.2
			776+00 ¹⁰	12	42.9
			776+50 ¹⁰	12	42.8
		Approximate Length: 300 ft			

Notes:

- 1 - Stations correspond to that of I-405 mainline unless otherwise noted.
- 2 - Top of barrier elevations shall take precedence over specified barrier heights for design and construction purposes.
- 3 - In-kind replacement of an existing soundwall at new location with same height.
- 4 - Replacement of existing soundwall at new location with new height.
- 5 - Replacement of existing soundwall at same location with new height.
- 6 - Stations correspond to that of the southbound on ramp at Talbert Avenue.
- 7 - Stations correspond to that of the northbound off ramp at Brookhurst Avenue.
- 8 - Stations correspond to that of the southbound off ramp at Brookhurst Avenue.
- 9 - Stations correspond to that of the northbound off ramp at Magnolia Street.
- 10 - Stations correspond to that of the northbound off ramp at Warner Avenue.

Alternative 2**Table 7-26A. Summary of Reasonableness Determination Data – Alternative 2 – Soundwall S776**

Barrier I.D.: S776					
Predicted Sound Level without Barrier					
Critical Design Receiver: R2.77A					
Design Year Noise Level, dBA $L_{eq}(h)$: 77					
Design Year Noise Level Minus Existing Noise Level: 3					
Design Year with Barrier	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction, dB	5	6	7	7	7
Number of Benefited Residences	1	1	1	1	1
New Highway or More than 50% of Residences Predate 1978 ^b	No	No	No	No	No
Reasonable Allowance Per Benefited Residence	\$39,000	\$41,000	\$41,000	\$41,000	\$41,000
Total Reasonable Allowance	\$39,000	\$41,000	\$41,000	\$41,000	\$41,000

Note: N/A-Not applicable. Barrier does not provide 5 dB of noise reduction.

^a A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

^b This adjustment increases the abatement allowance by \$10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

**Table G-8 – Predicted Future Noise Levels and Barrier Analysis –
Alternative 2 – Segment 2 (Cont'd)**

Receiver I.D.	Barrier I.D. and Location	Land Use ²	Number of Dwelling Units	Existing Noise Level Leq(h), dBA ^{1,3}	I-405 PA-ED Alternative 2 Future Worst Hour Noise Levels - Leq(h), dBA ^{1,6}																				
					Design Year No Build Noise Level Leq(h), dBA ¹	Design Year Build Noise Level Leq(h), dBA ¹	Design Year No Build Noise Level Minus Existing Conditions Leq(h), dBA	Design Year Build Noise Level Minus No Build Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type ⁴	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR)														
											8 feet			10 feet			12 feet			14 feet			16 feet		
											Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR
R 2.66 ^W	-	SFR	3	66 ^{MOD}	65	66	-1	1	B (67)	A/E	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.67 ^{W*}		SFR	1	60 ^{MOD}	59	61	-1	2	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.68 ^W		SFR	2	55 ^{MOD}	54	54	-1	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.69 ^W		SFR	3	65 ^{MOD}	64	66	-1	2	B (67)	A/E	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.70 ^{W*}		SFR	1	58 ^{MOD}	57	58	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
R 2.71 ^W		SFR	3	64 ^{MOD}	63	64	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.72 ^{W*}		SFR	2	59 ^{MOD}	58	59	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.73 ^{W*}		SFR	2	54 ^{MOD}	53	54	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.74 ^W	-	SFR	3	64 ^{MOD}	63	63	-1	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.75 ^W		SFR	3	64 ^{MOD}	63	61	-1	-2	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.76 ^W		SFR	4	64 ^{MOD}	63	58	-1	-5	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.77A	S776 / R/W	SCH	1	74 ^{MOD}	75	77	1	2	B (67)	NONE	72	5	1	71	6	1	70 ^{R,T}	7	1	70	7	1	70	7	1
R 2.77 ^W	-	MFR	2	60 ^{MOD}	61	61	1	0	B (67)	NONE	59	2	0	58	3	0	58	3	0	58	3	0	58	3	0
R 2.78 ^W		MFR	4	61 ^{M,ST19}	62	61	1	-1	B (67)	NONE	58	3	0	58	3	0	57	4	0	57	4	0	57	4	0
R 2.79 ^W		MFR	4	65 ^{MOD}	66	62	1	-4	B (67)	NONE	59	3	0	59	3	0	58	4	0	58	4	0	58	4	0
R 2.80 ^W	S786, S788, & S792 Shoulder	SFR	3	64 ^{MOD}	65	64	1	-1	B (67)	NONE	61	3	0	61	3	0	61	3	0	60	4	0	60	4	0
R 2.81 ^{W,C}		SFR	3	68 ^{MOD}	69	67	1	-2	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	63	4	0	62 ^R	5	3
R 2.82 ^W		SFR	2	67 ^{MOD}	68	68	1	0	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	65	3	0	64	4	0
R 2.83 ^W		SFR	3	66 ^{MOD}	66	65	0	-1	B (67)	NONE	--	--	--	--	--	--	--	--	--	64	1	0	63	2	0
R 2.84 ^W		SFR	4	66 ^{M,LT11,CAL}	66	66	0	0	B (67)	A/E	--	--	--	--	--	--	--	-- ^T	--	--	65	1	0	64	2
R 2.85 ^W	-	SFR	4	66 ^{MOD}	66	67	0	1	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	66	1	0	65	2	0
R 2.86 ^W		SFR	3	65 ^{MOD}	65	65	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	64	1	0	63	2	0
R 2.87 ^W		SFR	4	64 ^{MOD}	64	64	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	63	1	0	62	2	0
R 2.88 ^W	-	SFR	4	62 ^{MOD}	62	62	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.89 ^W		SFR	3	63 ^{MOD}	63	60	0	-3	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.90 ^W		SFR	3	62 ^{MOD}	62	59	0	-3	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.91 ^W		SFR	2	63 ^{MOD}	63	62	0	-1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.92 ^W		SFR	1	61 ^{MOD}	61	61	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - school; REC - recreational/park; REL - religious institution; LIB - library.

3 - M - Measured noise level; STx or LTxx - measurement site number; CAL - noise model calibration site; MOD - Estimated from No-Build Alternative and measurement sites.

4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.

5 - Barrier height needed to meet requirements at adjacent receptor(s).

6 - Traffic noise from the freeway only; other local noise sources are not included.

7 - Existing soundwall is at a height of 16 feet.

R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.

T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.

C - Critical design receiver.

Int - The modeled exterior noise levels have been reduced based on window types and the interior noise criteria has been used for this receiver because there is no outdoor use.

W - Receiver protected by existing private property wall or soundwall.

* - Non first row residences.

**Table H-8 – Barrier Locations and Elevations –
Alternative 2 – Segment 2 (Cont'd)**

Barrier No.	Receivers Protected (Receiver No.)	Barrier Location / Hwy. Side	Barrier Stations ¹	Approximate Barrier Height, ft	Top of Barrier Elevation ² , ft
S776	R2.77A	R/W / Northbound	774+00 ¹⁰	12	43.5
			774+25 ¹⁰	12	43.4
			774+50 ¹⁰	12	43.4
			774+75 ¹⁰	12	43.3
			775+00 ¹⁰	12	43.2
			776+00 ¹⁰	12	42.9
			776+25 ¹⁰	12	42.8
			776+50 ¹⁰	12	42.8
		Approximate Length: 250 ft			

Notes:

- 1 - Stations correspond to that of I-405 mainline unless otherwise noted.
- 2 - Top of barrier elevations shall take precedence over specified barrier heights for design and construction purposes.
- 3 - In-kind replacement of an existing soundwall at new location with same height.
- 4 - Replacement of existing soundwall at new location with new height.
- 5 - Replacement of existing soundwall at same location with new height.
- 6 - Stations correspond to that of the southbound on ramp at Talbert Avenue.
- 7 - Stations correspond to that of the northbound off ramp at Brookhurst Avenue.
- 8 - Stations correspond to that of the southbound off ramp at Brookhurst Avenue.
- 9 - Stations correspond to that of the northbound off ramp at Magnolia Street.
- 10 - Stations correspond to that of the northbound off ramp at Warner Avenue.

Alternative 3**Table 7-51A. Summary of Reasonableness Determination Data – Alternative 3 – Soundwall S776**

Barrier I.D.: S776					
Predicted Sound Level without Barrier					
Critical Design Receiver: R2.77A					
Design Year Noise Level, dBA $L_{eq}(h)$: 77					
Design Year Noise Level Minus Existing Noise Level: 3					
Design Year with Barrier	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction, dB	5	6	7	7	7
Number of Benefited Residences	1	1	1	1	1
New Highway or More than 50% of Residences Predate 1978 ^b	No	No	No	No	No
Reasonable Allowance Per Benefited Residence	\$39,000	\$41,000	\$41,000	\$41,000	\$41,000
Total Reasonable Allowance	\$39,000	\$41,000	\$41,000	\$41,000	\$41,000

Note: N/A-Not applicable. Barrier does not provide 5 dB of noise reduction.

^a A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

^b This adjustment increases the abatement allowance by \$10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

Table G-14 – Predicted Future Noise Levels and Barrier Analysis –
Alternative 3 – Segment 2 (Cont'd)

Receiver I.D.	Barrier I.D. and Location	Land Use ²	Number of Dwelling Units	Existing Noise Level Leq(h), dBA ^{1,3}	I-405 PA-ED Alternative 3 Future Worst Hour Noise Levels - Leq(h), dBA ^{1,6}																				
					Design Year No Build Noise Level Leq(h), dBA ¹	Design Year Build Noise Level Leq(h), dBA ¹	Design Year No Build Noise Level Minus Existing Conditions Leq(h), dBA	Design Year Build Noise Level Minus No Build Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type ⁴	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR)														
											8 feet			10 feet			12 feet			14 feet			16 feet		
											Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR	Leq(h)	I.L.	NBR
R 2.66 ^W	--	SFR	3	66 ^{MOD}	65	66	-1	1	B (67)	A/E	--	--	--	--	--	--	--	--	--	--	7	--	--		
R 2.67 ^{W*}		SFR	1	60 ^{MOD}	59	61	-1	2	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--		
R 2.68 ^W		SFR	2	55 ^{MOD}	54	54	-1	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--		
R 2.69 ^W		SFR	3	65 ^{MOD}	64	66	-1	2	B (67)	A/E	--	--	--	--	--	--	--	--	--	--	7	--	--		
R 2.70 ^{W*}		SFR	1	58 ^{MOD}	57	58	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--		
R 2.71 ^W		SFR	3	64 ^{MOD}	63	64	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--		
R 2.72 ^{W*}		SFR	2	59 ^{MOD}	58	59	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--		
R 2.73 ^{W*}		SFR	2	54 ^{MOD}	53	54	-1	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	7	--	--		
R 2.74 ^W	--	SFR	3	64 ^{MOD}	63	63	-1	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 2.75 ^W		SFR	3	64 ^{MOD}	63	61	-1	-2	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 2.76 ^W		SFR	4	64 ^{MOD}	63	58	-1	-5	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--		
R 2.77A	S776 / R/W	SCH	1	74 ^{MOD}	75	77	1	2	B (67)	NONE	72	5	1	71	6	1	70 ^{R,T}	7	1	70	7	1	70	7	1
R 2.77 ^W	--	MFR	2	60 ^{MOD}	61	61	1	0	B (67)	NONE	59	2	0	58	3	0	58	3	0	58	3	0	58	3	0
R 2.78 ^W		MFR	4	61 ^{M,ST19}	62	61	1	-1	B (67)	NONE	58	3	0	57	4	0	57	4	0	57	4	0	57	4	0
R 2.79 ^W		MFR	4	65 ^{MOD}	66	62	1	-4	B (67)	NONE	59	3	0	59	3	0	58	4	0	58	4	0	58	4	0
R 2.80 ^W	S786, S788, & S792 Shoulder	SFR	3	64 ^{MOD}	65	64	1	-1	B (67)	NONE	61	3	0	61	3	0	61	3	0	60	4	0	60	4	0
R 2.81 ^{W,C}		SFR	3	68 ^{MOD}	69	67	1	-2	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	63	4	0	62 ^R	5	3
R 2.82 ^W		SFR	2	67 ^{MOD}	68	68	1	0	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	65	3	0	64	4	0
R 2.83 ^W		SFR	3	66 ^{MOD}	66	65	0	-1	B (67)	NONE	--	--	--	--	--	--	--	--	--	64	1	0	63	2	0
R 2.84 ^W		SFR	4	66 ^{MLT11,CAL}	66	66	0	0	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	65	1	0	64	2	0
R 2.85 ^W		SFR	4	66 ^{MOD}	66	67	0	1	B (67)	A/E	--	--	--	--	--	--	-- ^T	--	--	66	1	0	65	2	0
R 2.86 ^W	--	SFR	3	65 ^{MOD}	65	65	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	64	1	0	63	2	0
R 2.87 ^W		SFR	4	64 ^{MOD}	64	64	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	63	1	0	62	2	0
R 2.88 ^W		SFR	4	62 ^{MOD}	62	63	0	1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.89 ^W	--	SFR	3	63 ^{MOD}	63	60	0	-3	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.90 ^W		SFR	3	62 ^{MOD}	62	59	0	-3	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.91 ^W		SFR	2	63 ^{MOD}	63	62	0	-1	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R 2.92 ^W		SFR	1	61 ^{MOD}	61	61	0	0	B (67)	NONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

- 1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
- 2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - school; REC - recreational/park; REL - religious institution; LIB - library.
- 3 - M - Measured noise level; STxx or LTxx - measurement site number; CAL - noise model calibration site; MOD - Estimated from No-Build Alternative and measurement sites.
- 4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
- 5 - Barrier height needed to meet requirements at adjacent receptor(s).
- 6 - Traffic noise from the freeway only; other local noise sources are not included.
- 7 - Existing soundwall is at a height of 16 feet.
- R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
- T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
- C - Critical design receiver.
- Int - The modeled exterior noise levels have been reduced based on window types and the interior noise criteria has been used for this receiver because there is no outdoor use.
- W - Receiver protected by existing private property wall or soundwall.
- * - Non first row residences.

**Table H-14 – Barrier Locations and Elevations –
Alternative 3 – Segment 2 (Cont'd)**

Barrier No.	Receivers Protected (Receiver No.)	Barrier Location / Hwy. Side	Barrier Stations ¹	Approximate Barrier Height, ft	Top of Barrier Elevation ² , ft
S776	R2.77A	R/W / Northbound	774+00 ¹⁰	12	43.5
			774+25 ¹⁰	12	43.4
			774+50 ¹⁰	12	43.4
			774+75 ¹⁰	12	43.3
			775+00 ¹⁰	12	43.2
			776+00 ¹⁰	12	42.9
			776+25 ¹⁰	12	42.8
			776+50 ¹⁰	12	42.8
Approximate Length: 250 ft					

Notes:

- 1 - Stations correspond to that of I-405 mainline unless otherwise noted.
- 2 - Top of barrier elevations shall take precedence over specified barrier heights for design and construction purposes.
- 3 - In-kind replacement of an existing soundwall at new location with same height.
- 4 - Replacement of existing soundwall at new location with new height.
- 5 - Replacement of existing soundwall at same location with new height.
- 6 - Stations correspond to that of the southbound on ramp at Talbert Avenue.
- 7 - Stations correspond to that of the northbound off ramp at Brookhurst Avenue.
- 8 - Stations correspond to that of the southbound off ramp at Brookhurst Avenue.
- 9 - Stations correspond to that of the northbound off ramp at Magnolia Street.
- 10 - Stations correspond to that of the northbound off ramp at Warner Avenue.